REMARKS

Claims 1-13 are pending in this application. By this Amendment, claims 1, 2, 4, 8, and 11 are amended, and claims 12 and 13 are added.

No new matter is added by this Amendment. Amended claims 1 and 8 are supported by the original specification, for example at page 10, lines 5-7, page 4, lines 1-2, 21 and 27-28 and page 3, lines 27-34. Amended claims 2 and 11 are supported by the original specification, for example at page 10, lines 5-7. New claims 12 and 13 are supported by the original specification, for example at page 4, lines 11-19.

Applicants appreciate the courtesies shown to Applicants' representative by Examiner Richey and Examiner Lee in the July 19, 2007 interview. Applicants' separate record of the substance of the interview is incorporated into the following remarks.

I. Rejections under 35 U.S.C. §112, second paragraph

Claim 4 was rejected under 35 U.S.C. §112, second paragraph as allegedly being indefinite. Applicants respectfully traverse this rejection.

Claim 4 is amended to remove the word "nominally." Therefore, claim 4 is definite.

Claim 8 was rejected for using the word "supposition." Applicants have amended the typographical error to correct the term "superposition."

Claims 4 and 8 are now definite. Reconsideration and withdrawal of the rejection are thus respectfully requested.

II. Rejections under 35 U.S.C. §102(b)

Use of adjustable elements (e.g., prisms or the like) to steer optical beams is known. It has, however, always been thought necessary to use a pair of high quality optically matched prisms when it is wished to accurately adjust the beam direction in two planes. This is because it is not possible to rotate a pair of non-matched adjustable elements so that a beam of light passes straight through them (i.e., so that incident and outgoing light beams are

parallel). In other words, the use of a pair of matched prisms (or other adjustable elements) was previously thought to be essential when implementing an optical system for accurately steering a beam.

It was surprisingly discovered in the present application that is it possible to use non-matched adjustable elements for accurate beam steering purposes. This is achieved by directing the laser beam from the laser source onto the non-matched adjustable elements at an angle that is always oblique to the required beam direction (i.e., building a "design angle" into the system). Rotating the adjustable elements about the beam path can then be used to deviate the input beam so that it is directed along the required beam direction. The present application can thus be seen to permit accurate beam steering to be achieved using lower complexity, and cheaper, optical systems (i.e., using non-matched adjustable elements) than was previously thought possible.

A. Morimoto

Claims 1-7 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 4,850,686 (Morimoto). Applicants respectfully traverse this rejection.

Morimoto does not teach or suggest all of the features recited in claim 1. Morimoto shows various beam steering arrangements. As noted by the Patent Office, the prisms 50 and 60 of Figure 11 of Morimoto are separately rotatable about axes L6 and L7 and prisms 3 and 4 are separately rotatable about axes L2 and L3, respectively. The rotation shown in Morimoto is about axes that are perpendicular to the beam path. See axes L6 and L7 of Figure 11, axes L2 and L3 of Figure 16 and column 11, lines 1-6 of Morimoto. Therefore, unlike the feature recited in claim 1, Morimoto does not teach or suggest prisms adjustable about the laser beam path.

Further, the prisms as taught by Morimoto are matched prisms. In Morimoto, the incident and outgoing beams can be parallel to one another at the zero adjusting state. See

column 11, lines 29-33 of Morimoto. Therefore, the prisms as taught by Morimoto are matched prisms. Thus, Morimoto does not teach or suggest (1) an optical system wherein the prisms are non-matched, and (2) providing a laser beam from a laser source that is always oblique (i.e., non-parallel) to the required beam direction, as recited in claim 1.

Finally, Morimoto would not have led one of ordinary skill in the art to the laser system recited in claim 1. Morimoto makes no mention of adjusting the adjustable elements by rotating the elements about the axis of the beam path to provide beam steering. Also, Morimoto only describes using matched prisms, and does not teach or suggest that the incident laser source should always be oblique to the required beam direction. Therefore, Morimoto teaches that high precision optically matched adjustable components were always necessary to provide a beam steering function. Thus, Morimoto teaches away from the features recited in claim 1 and does teach or suggest the laser system as recited in claims 1-7.

In view of the foregoing, it is evident that Morimoto does not teach or suggest the laser system as recited in claims 1-7. Reconsideration and withdrawal of the rejection are thus respectfully requested.

C. Hemstreet

Claims 8-11 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 3,170,982 (Hemstreet). Applicants respectfully traverse the rejection.

Hemstreet describes a device for testing the quality of corner cube reflectors or similar optical components. This is achieved by passing two parallel light beams through a test cube in opposite directions and observing the resulting interference pattern. See column 4, lines 23-31 of Hemstreet.

However, Hemstreet does not teach or suggest all of the features recited in claims 8-11 for at least the following reasons.

First, Hemstreet describes a system using a white light source, instead of a laser. The white light source of Hemstreet may be used in combination with a collimator lens to provide a polychromatic (white) light beam. See column 14, lines 51-53 of Hemstreet. Therefore, Hemstreet does not teach or suggest a laser interferometer, a first laser beam, or a second laser beam, as recited in claim 8.

Second, the two light beams generated according to the device of Hemstreet are passed through the corner cup reflection and combined to form an interference pattern. Hemstreet provides an eyepiece for a person to observe the interference pattern. See Hemstreet Figure 7B, item 78 and column 14, lines 61-63. Thus, Hemstreet does not teach or suggest a detector for detecting the interference beam, as recited in claim 8.

Third, the wedges 77 as taught by Hemstreet are a pair of matched optical elements. This is inherent from column 14, lines 72-73 stating that the wedges provide a zero deviation setting. Therefore, Hemstreet does not teach or suggest first and second adjustable elements that are non-matched optical elements, as recited in claim 8.

Fourth, the light beam 76 in Figure 7A of Hemstreet are perpendicular to the face of the wedges 77. This is possible because the wedges are matched optical elements. It can therefore be seen that the light beam as taught by Hemstreet is not always oblique to a required beam direction as recited in claim 8.

Applicants thus submit that Hemstreet does not teach or suggest the laser interferometer recited in claim 8. Similar to Morimoto, Hemstreet teaches that high quality matched optical elements are required for beam steering purposes. Therefore, claim 8 and dependent claims 9-11 and 13 are not taught or suggested by Hemstreet.

For at least the foregoing reasons, Hemstreet does not teach or suggest the laser interferometer comprising a laser source, non-matched optical elements and a first laser beam

that is always oblique to a required beam direction, as recited in claim 8. Reconsideration and withdrawal of the rejection are thus respectfully requested.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-13 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

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